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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,856

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Kari Laitinen

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EXAMINER

PATEL, VISHAL A

ART UNIT

PAPER NUMBER

3676

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/588,856	<b>Applicant(s)</b> LAITINEN, KARI	
	<b>Examiner</b> Vishal Patel	<b>Art Unit</b> 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki et al (US. 6357753) in view of Story of Nitinol.

Yamasaki discloses an arrangement in a mechanical shaft seal comprising a first sliding surface part (e.g. 35) rotating with a shaft (e.g. 2) in relation to a frame (e.g. 1), at least a second sliding surface part (e.g. 22) fastened to the frame or a separate frame part (e.g. 13) that is non-rotatable in relation thereto, the first sliding surface part and the second sliding surface part are provided with sliding surfaces pressed against one another, a first additional part (e.g. 40) arranged to connect the first sliding surface part to at least one of the shaft and a first insertion part (e.g. 39) fastened to the shaft and is configured to rotating therewith in order to transfer the rotating motion from the shaft to the first sliding surface part (intended use, the first insertion part is capable of being rotated), a second additional part (e.g. 21) is arranged to connect the second sliding surface part to the frame or at least to one second insertion part (e.g. 10) connected to the frame in order to prevent the rotation of the second sliding surface part in relation to the frame, at least one of the first additional part arranged to transfer the rotation

Art Unit: 3676

torque of at least one of the shaft and the second additional part receiving torque is a super elastic metal element (e.g. 21 is made of super elastic memory metal which is titanium).

Regarding claims 2-9: All the first and second additional parts are memory metal elements (e.g. members are made of stainless steel or other alloys). All the first and second additional parts are pins (e.g. 24 and 45). All the first and second additional parts are threaded pins (e.g. 38). All of the first and second additional parts are plates (e.g. 40 and 21). All the first and second additional parts are rings (e.g. 40 and 21). The first and second additional parts are machining features of the first sliding surface part and second sliding surface part (end surfaces of the first and second sliding surface part, machining is a method limitation and given little patentable weight in an apparatus claim). The arrangement also comprises at least one spring (e.g. 9) which is arranged to press opposite sliding surfaces of the first sliding surface part and the second sliding surface part against one another. The second insertion part movably fastened in the longitudinal direction of the shaft to the frame, which is connected to the second sliding surface part that is non rotatable in relation to the frame and which is pressed using the spring against the second sliding surface part, the sliding surface thereof of the spring being further pressed against the sliding surface of the first sliding surface part that is rotatable in relation to the frame (figures).

Yamasaki discloses the invention substantially as claimed above but fails to disclose that the at least one of the first additional part arranged to transfer the rotation torque of at least one of the shaft and the second additional part receiving torque is memory elastic metal element (e.g. Nitinol). The Story of Nitinol teaches that memory elastic metal is used to form connections (e.g. connection between two elements, page 10), seals (e.g. page 15) and other elements (e.g.

Art Unit: 3676

see entire document). It would have been obvious to one having ordinary skill in the art at the time of the invention to have the first additional or all of the first and second additional parts of Yamasaki to be formed of memory elastic metal so as to provide a connection, seal or other elements that provide strain and heat actuated recovery (e.g. see pages of the Story of Nitinol).

### ***Response to Arguments***

3. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vishal Patel whose telephone number is 571-272-7060. The examiner can normally be reached on 6:30am to 8:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3676

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. P./

Primary Examiner, Art Unit 3676

/Vishal Patel/

Primary Examiner, Art Unit 3676